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1d 26/04Serial No. 09/321,998, filed May 28, 1999, entitled AVOIDING N-SQUARED <sup>and now Patent number 6,532,494</sup>

HEARTBEAT MESSAGING PROBLEM IN AN OPERATING CLUSTER VIA CLOSED LOOP MESSAGING THEME, by Richard Frank, Michael Cusson, Joydip Kundu, and Daniel E. O'Shaughnessy, inventors;

Serial No. 09/322,472, filed May 28, 1999, entitled USING A CLUSTER-WIDE SHARED REPOSITORY TO PROVIDE THE LATEST CONSISTENT DEFINITION OF THE CLUSTER (AVOIDING THE PARTITION-IN-TIME PROBLEM), by Joydip Kundu, Richard Frank, Michael Cusson and Daniel E. O'Shaughnessy, inventors; and

Serial No. 09/321,967, filed May 28, 1999, entitled PROVIDING FIGURE OF MERIT VOTE FROM APPLICATION EXECUTING ON A PARTITIONED CLUSTER, by Richard Frank, Michael Cusson, Joydip Kundu, and Daniel E. O'Shaughnessy, inventors.

*Please replace the paragraph at page 10, lines 4 through 9 with the following paragraph:*

As described above in conjunction with FIG. 2, the cluster manager 32, in concert with the cluster managers residing on node\_2 - node\_4 14, 16, 18, manages cluster connectivity within the quorumless cluster 10. For the cluster managers to effectively cooperate in the connectivity management endeavor, a facility for sharing data is provided. The shareable storage device 22 of FIG. 1 houses a repository for this data sharing facility.

*Please replace the paragraphs in the Abstract, at page 21, lines 3 through 22 with the following paragraphs:*

A quorumless network cluster provides a highly available system by addressing the partition-in-space and partition-in-time problems in network clusters.

In a particular solution, a cluster manager (CM) can use disk based messaging to manage the operation of the cluster. Each node within the cluster must have access to a shared disk to operate within the cluster.

A particular methodology can operate the cluster in a closed loop between nodes 1 to N. If a node fails to receive a heartbeat message from its predecessor in the loop, it initiates a cluster reconfiguration by sending a reconfiguration message to each other node in the cluster.